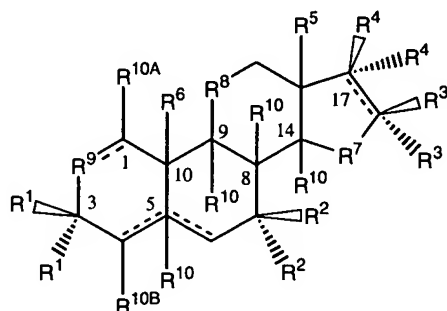


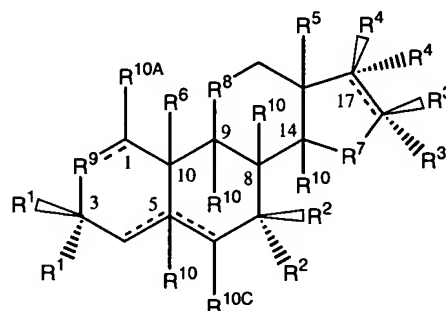
CLAIMS

[00995] What is claimed is:

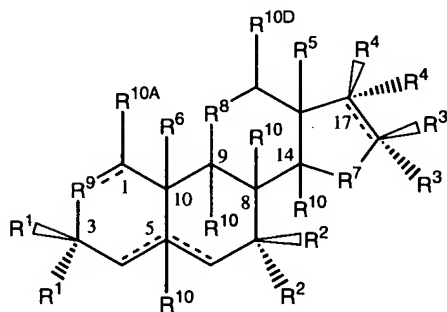
[00996] 1. A method to prevent, treat, ameliorate or slow the progression of cystic fibrosis, sickle cell disease, autism, neutropenia or thrombocytopenia in a subject, or to treat a symptom of the cystic fibrosis, sickle cell disease, autism, neutropenia or thrombocytopenia, comprising administering to a subject, or delivering to the subject's tissues, an effective amount of a formula 1 compound having the structure 5, 6, 7, 8, 9, 10, 11, 12, 13 or 14



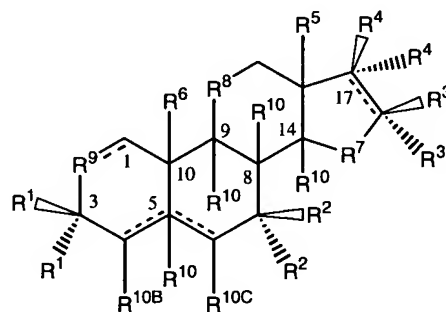
5



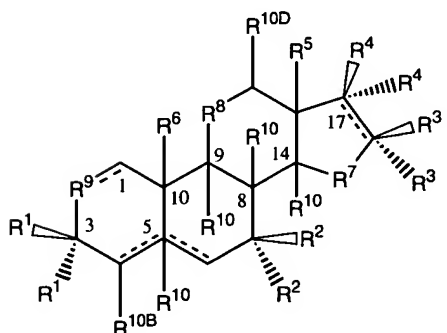
6



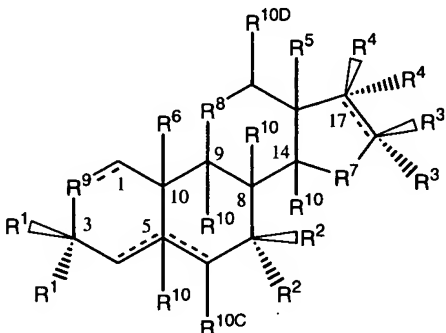
7



8

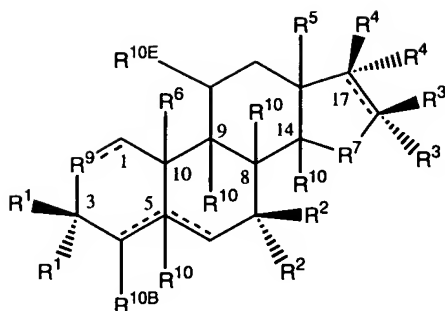


9

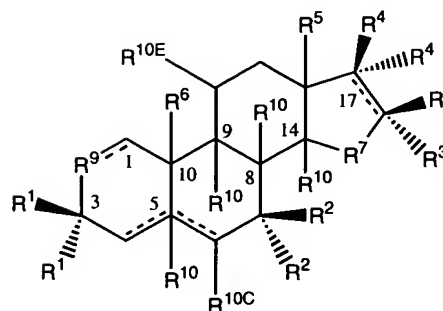


10

[001000]

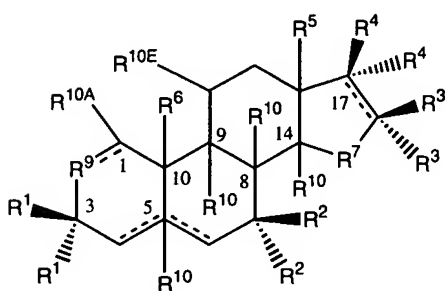


11

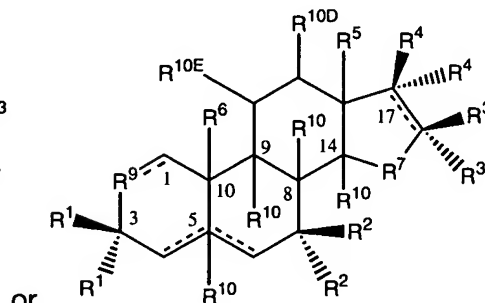


12

[001001]



13



14

5 [001002] or a metabolic precursor or a metabolite thereof, wherein

[001003] R^{10} moieties at the 5 (if present), 8, 9 and 14 positions respectively are in the $\alpha, \alpha, \alpha, \alpha$, $\alpha, \alpha, \alpha, \beta$, $\alpha, \alpha, \beta, \alpha$, $\alpha, \beta, \alpha, \alpha$, $\beta, \alpha, \alpha, \alpha$, $\alpha, \alpha, \beta, \beta$, $\alpha, \beta, \alpha, \beta$, $\beta, \alpha, \alpha, \beta$, $\beta, \alpha, \beta, \alpha$, $\beta, \beta, \alpha, \alpha$, $\alpha, \beta, \beta, \alpha$, $\alpha, \beta, \beta, \beta$, $\beta, \alpha, \beta, \beta$, $\beta, \beta, \alpha, \beta$, $\beta, \beta, \beta, \alpha$ or $\beta, \beta, \beta, \beta$ configurations,

[001004] wherein R^{10A} , R^{10B} , R^{10C} , R^{10D} and R^{10E} respectively are in the α, α , α, β , β, α or β, β configurations,

[001005] wherein, each R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^{10} , R^{10A} , R^{10B} , R^{10C} , R^{10D} and R^{10E} independently are -H, -OH, -OR^{PR}, -SR^{PR}, -N(R^{PR})₂, -O-Si-(R¹³)₃, -CHO, -CHS, -CN, -SCN, -NO₂, -NH₂, -COOH, -OSO₃H, -OPO₃H, an ester, a thioester, a thionoester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an amide, an amino acid, a peptide, an ether, a thioether, an acyl group, a thioacyl group, a carbonate, a carbamate, a halogen, an optionally substituted alkyl group, an optionally substituted alkenyl group, an optionally substituted alkynyl group, an optionally substituted aryl moiety, an optionally substituted heteroaryl moiety, an optionally substituted heterocycle, an optionally substituted monosaccharide, an optionally substituted oligosaccharide, a nucleoside, a nucleotide, an oligonucleotide, a polymer, or,

[001006] one more of R^1 , R^2 , R^3 , R^4 , R^5 , R^6 , R^{10} , R^{10A} , R^{10B} , R^{10C} , R^{10D} and R^{10E} are =O, =S, =N-OH, =CH₂, =CH-CH₃, or an independently selected spiro ring and the

hydrogen atom or the second variable group that is bonded to the same carbon atom is absent, or,

[001007] one or more of two adjacent R^1 - R^6 , R^{10} , R^{10A} , R^{10B} , R^{10C} , R^{10D} and R^{10E} comprise an independently selected epoxide, acetal, a thioacetal, ketal or thioketal;

5 [001008] R^7 is $-C(R^{10})_2$ -, $-C(R^{10})_2-C(R^{10})_2$ -, $-C(R^{10})_2-C(R^{10})_2-C(R^{10})_2$ -, $-C(R^{10})_2-O-C(R^{10})_2$ -, $-C(R^{10})_2-S-C(R^{10})_2$ -, $-C(R^{10})_2-NR^{PR}-C(R^{10})_2$ -, $-O$ -, $-O-C(R^{10})_2$ -, $-S$ -, $-S-C(R^{10})_2$ -, $-NR^{PR}$ - or $-NR^{PR}-C(R^{10})_2$;

[001009] R^8 and R^9 independently are $-C(R^{10})_2$ -, $-C(R^{10})_2-C(R^{10})_2$ -, $-O$ -, $-O-C(R^{10})_2$ -, $-S$ -, $-S-C(R^{10})_2$ -, $-NR^{PR}$ - or $-NR^{PR}-C(R^{10})_2$ -, or one or both of R^8 or R^9 independently are
10 absent, leaving a 5-membered ring;

[001010] R^{13} independently is C_{1-6} alkyl; and

[001011] R^{PR} independently is $-H$ or a protecting group, provided that one R^4 is $-NH_2$, an optionally substituted amine, $-N(R^{PR})_2$, $=NOH$, $=NO$ -optionally substituted alkyl, an amide, a carbamate or an N-linked amino acid, or the condition is cystic fibrosis or a sickle
15 cell disease.

[001012] 2. The method of claim 1 wherein one each of R^1 , R^2 , R^3 and R^4 are $-H$, and, when no double bond links the second R^1 , R^2 , R^3 and R^4 to the ring to which it is bonded and no double bond is present at the 16-17 position, then the second R^1 , R^2 , R^3 and R^4 respectively are in the $\alpha, \alpha, \alpha, \alpha$, $\alpha, \alpha, \alpha, \beta$, $\alpha, \alpha, \beta, \alpha$, $\alpha, \beta, \alpha, \alpha$, $\beta, \alpha, \alpha, \alpha$, $\alpha, \alpha, \beta, \beta$, $\alpha, \beta, \alpha, \beta$,
20 $\beta, \alpha, \alpha, \beta$, $\beta, \alpha, \beta, \alpha$, $\beta, \beta, \alpha, \alpha$, $\alpha, \beta, \beta, \alpha$, $\alpha, \beta, \beta, \beta$, $\beta, \alpha, \beta, \beta$, $\beta, \beta, \alpha, \beta$, $\beta, \beta, \beta, \alpha$ or $\beta, \beta, \beta, \beta$ configurations and the second R^1 , R^2 , R^3 and R^4 are optionally independently selected from $-H$, $-F$, $-Cl$, $-Br$, $-I$, $-OH$, $-SH$, $-NH_2$, $-COOH$, $-CH_3$, $-C_2H_5$, $-C(CH_3)_3$, $-OCH_3$, $-OC_2H_5$, $-CF_3$, $-CH_2OH$, $-C(O)CH_3$, $-C(O)CH_2OH$, $-C(O)CH_2F$, $-C(O)CH_2Cl$, $-C(O)CH_2Br$, $-C(O)CH_2I$, $-C(O)CF_3$, $-C_2F_5$, $=O$, $=CH_2$, $=CHCH_3$, amino acid, carbamate, carbonate, optionally
25 substituted $C1$ - $C20$ alkyl, optionally substituted $C1$ - $C20$ ether, optionally substituted $C1$ - $C20$ ester, optionally substituted $C1$ - $C20$ thioether, optionally substituted $C1$ - $C20$ thioester, optionally substituted monosaccharide, optionally substituted disaccharide, optionally substituted oligosaccharide.

[001013] 3. The method of claim 2 wherein

30 [001014] (a) R^{10A} is bonded to the ring to which it is attached by a single bond and a double bond is present at (i) the 1-2 position, or (ii) the 1-2 and 16-17 positions; or

[001015] (b) R^{10B} is bonded to the ring to which it is attached by a single bond and a double bond is present at the 4-5 position; or

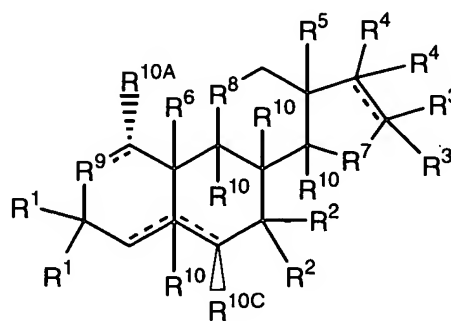
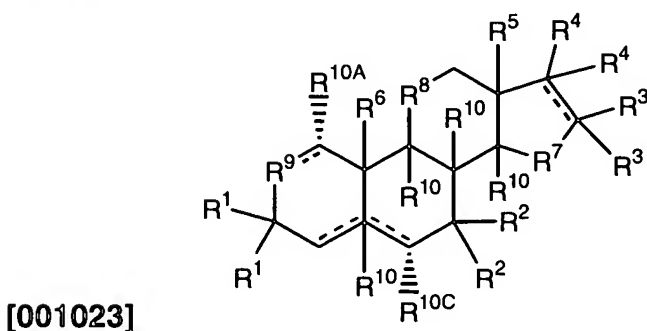
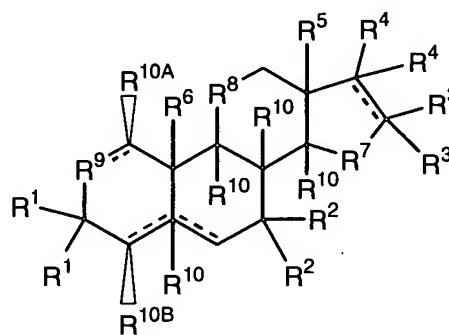
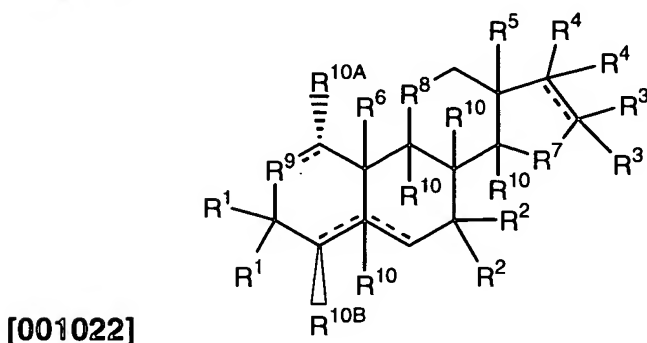
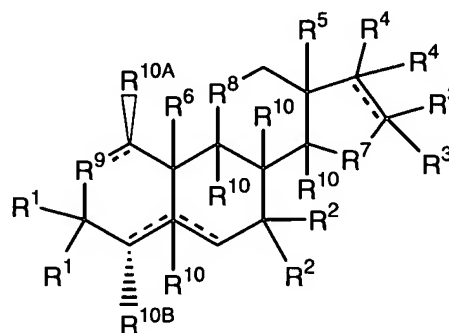
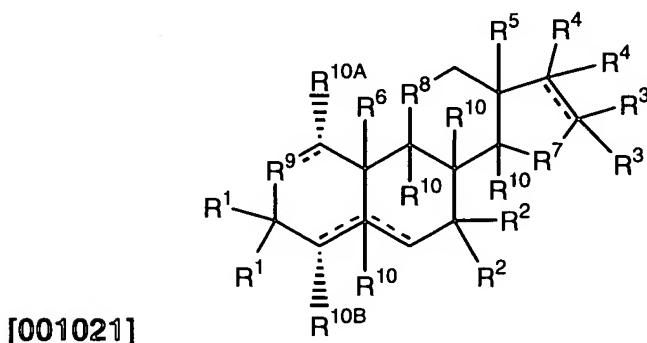
[001016] (c) R^{10c} is bonded to the ring to which it is attached by a single bond and a double bond is present at the 5-6 position; or

[001017] (d) R^{10A} and R^{10B} are bonded to the rings to which they are attached by a single bond and a double bond is present at (i) the 1-2 and 4-5 positions, or (ii) the 1-2, 4-5 and 16-17 positions;

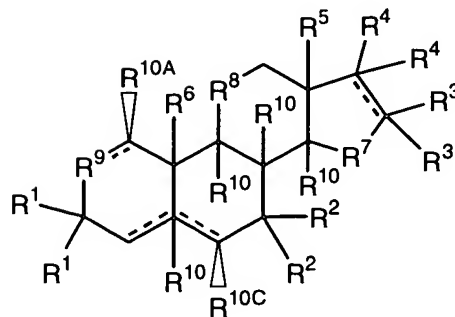
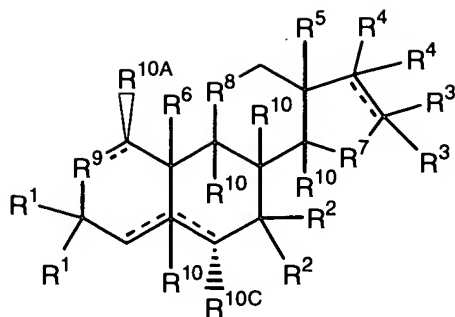
[001018] (e) R^{10A} and R^{10C} are bonded to the rings to which they are attached by a single bond and a double bond is present at (i) the 1-2 and 5-6 positions, or (ii) the 1-2, 5-6 and 16-17 positions; or

[001019] (f) no double bond is present.

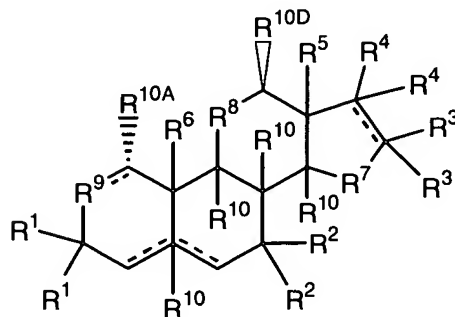
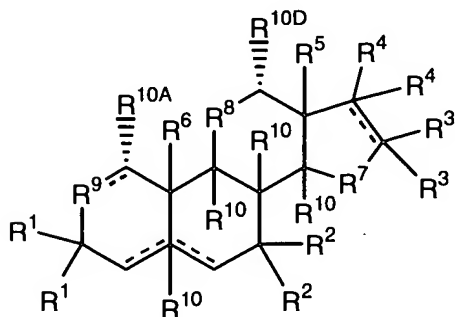
10 [001020] 4. The method of claim 1 wherein the compounds of structure 5, 6, 7, 8, 9, 10, 11 and 12 have the structure



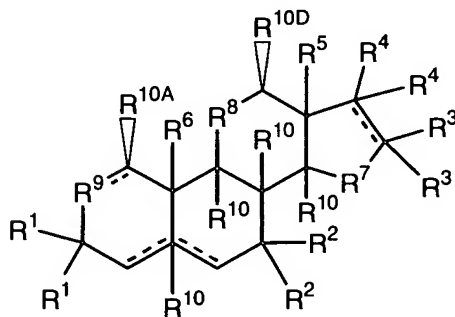
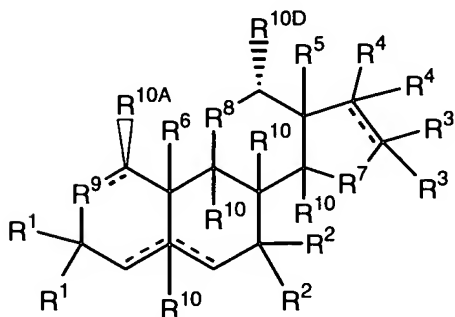
[001024]



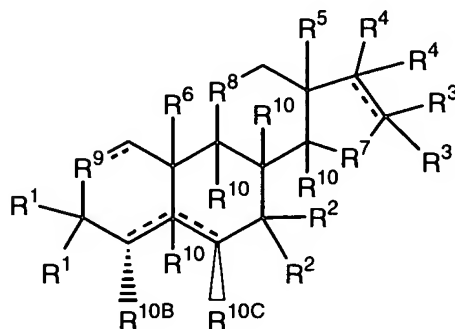
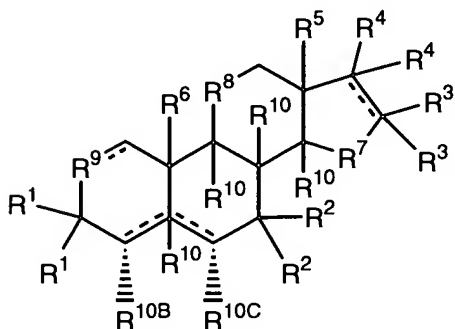
[001025]



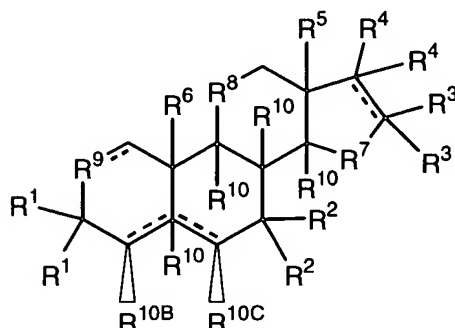
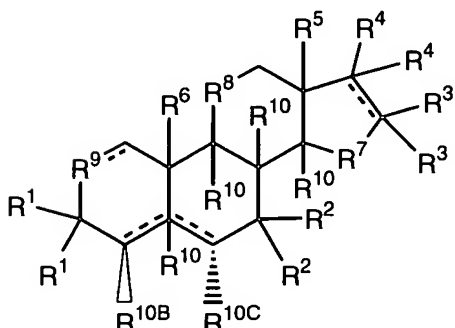
[001026]

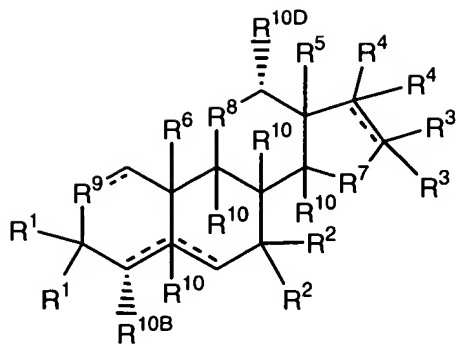


[001027]

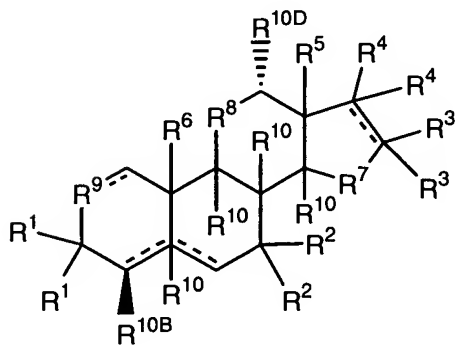
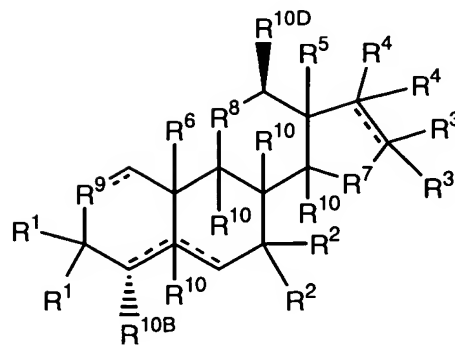


[001028]

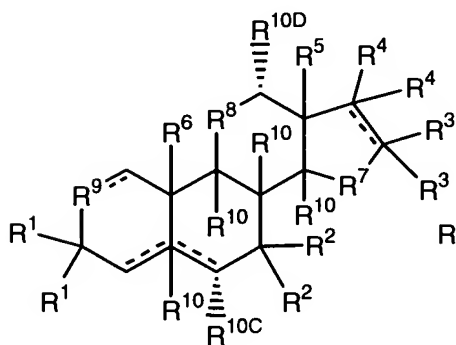
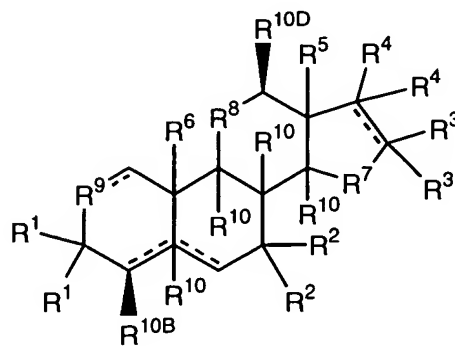




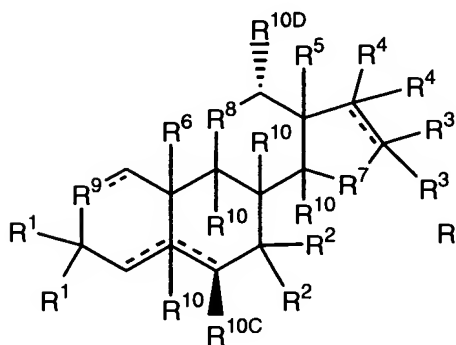
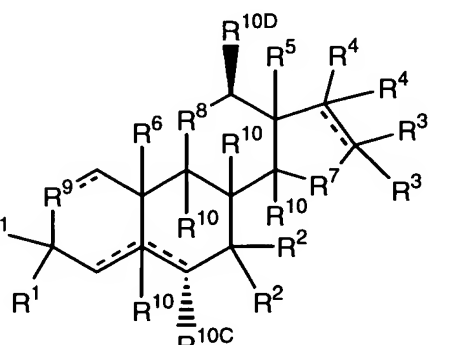
[001029]



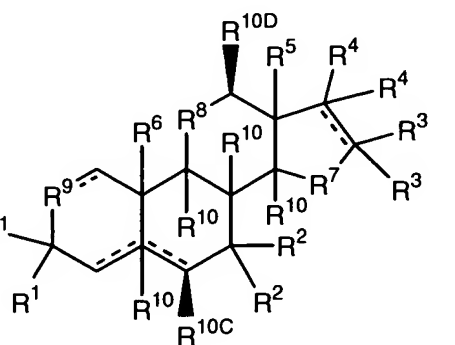
[001030]

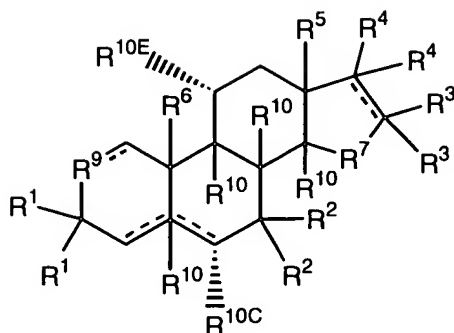


[001031]

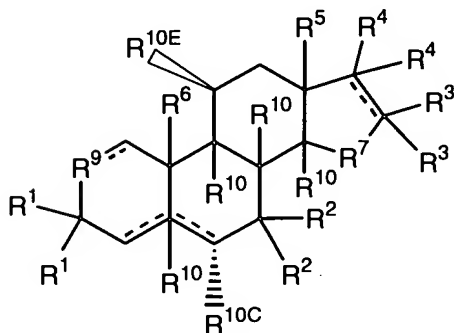
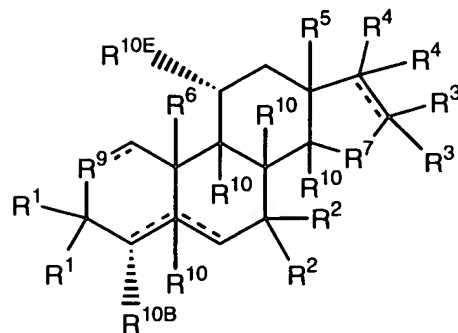


[001032]

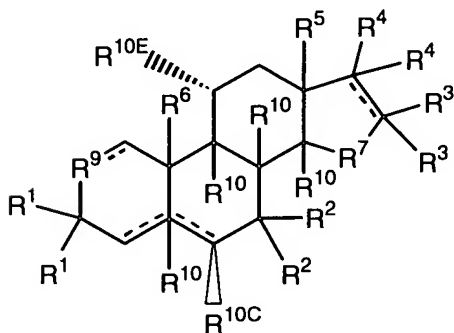
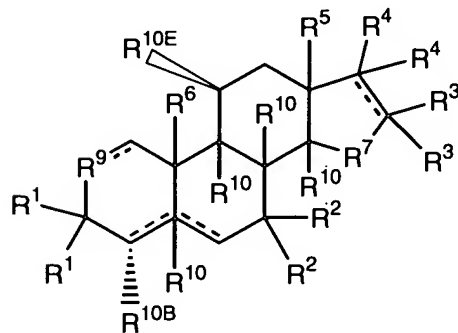




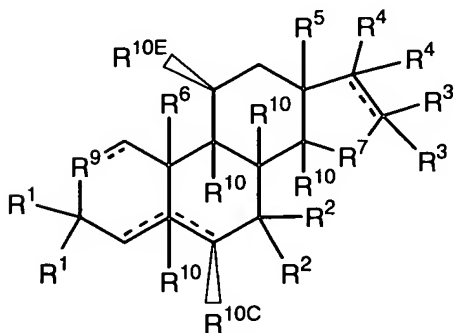
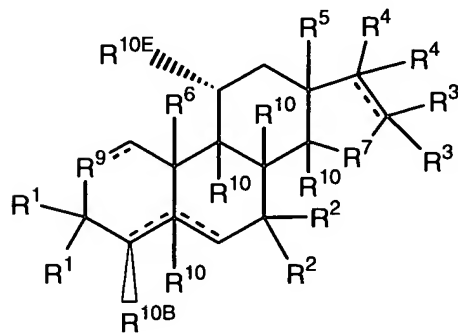
[001033]



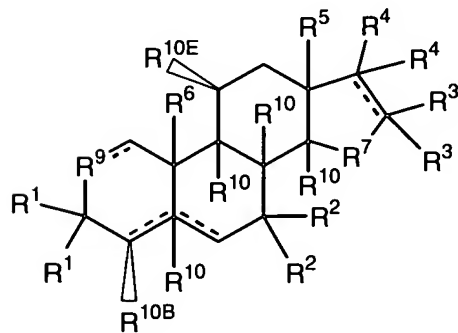
[001034]



[001035]



[001036]



[001037]

- 5 [001037] provided that if a double bond is present at the 1-2, 4-5 or 5-6 positions, then R^{10A} , R^{10B} or R^{10C} respectively are bonded to the ring to which they are linked by a single bond.

[001038] 5. The method of claim 4 wherein (1) R^5 and R^6 respectively are in the α,α , α,β , β,α or β,β configuration and R^5 and R^6 are optionally both $-CH_3$ or are optionally

selected from -H, -CH₃ and -CH₂OH or (2) R⁵ and R⁶ are both in the β -configuration and R⁵ and R⁶ are optionally both -H, -CH₃ or -CH₂OH.

[001039] 6. The method of claim 5 wherein R¹⁰ at the 5, 8, 9 and 14-positions respectively are

- 5 **[001040]** (1) -H, -H, -H, -H;
[001041] (2) -H, -H, halogen (-F, -Cl, -Br or -I), -H;
[001042] (3) -H, -H, -H, -OH;
[001043] (4) -H, -H, halogen (-F, -Cl, -Br or -I), -OH;
[001044] (5) -optionally substituted alkyl (e.g., -CH₃, -CH₂OH, -CH₂O-ester, -C₂H₅), -
10 H, -H, -H;
[001045] (6) -optionally substituted alkyl (e.g., -CH₃, -CH₂OH, -CH₂O-ester, -C₂H₅), -
H, halogen (-F, -Cl, -Br or -I), -H;
[001046] (7) -optionally substituted alkyl (e.g., -CH₃, -CH₂OH, -CH₂O-ester, -C₂H₅), -
H, -H, -OH;
15 **[001047]** (8) -acyl (e.g., -C(O)-(CH₂)₀₋₂-CH₃), -H, -H, -H;
[001048] (9) -ester (e.g., acetoxy or propionoxy), -H, -H, -H;
[001049] (10) -ether (e.g., -O-(CH₂)₀₋₂-CH₃), -H, -H, -H;
[001050] (11) -ester (e.g., acetoxy, propionoxy, -O-C(O)-(CH₂)₁₋₆-H), -H, halogen
(e.g., -F, -Cl, -Br), -H;
20 **[001051]** (12) -ester (e.g., acetoxy or propionoxy), -H, -H, -OH;
[001052] (13) -H, -H, -H, -acyl (e.g., -C(O)-(CH₂)₀₋₂-CH₃);
[001053] (14) -H, -H, -H, -ester (e.g., acetoxy or propionoxy); or
[001054] (15) -H, -H, -H, -ether (e.g., -O-(CH₂)₀₋₂-CH₃, -OCH₃, -OC₂H₅, -OCH₂OH, -
OCH₂F, -OCH₂Br, -OCH₂COOH, -OCH₂NH₂, -OCH₂CH₂OH, -OCH₂CH₂F, -OCH₂CH₂Br, -
25 OCH₂CH₂COOH or -OCH₂CH₂NH₂).

[001055] 7. The method of claim 6 wherein R⁷ is -CH₂-, -CHOH-, -CH(α R¹⁰)-, -CH(ester)-, -CH(alkoxy)- or -CH(halogen)- where the hydroxyl, ester or alkoxy group or the halogen atom is present in the α -configuration and the alkoxy group is optionally selected from -OCH₃, -OC₂H₅ and -OC₃H₇ and the halogen atom is -F, -Cl, -Br or -I.

- 30 **[001056]** 8. The method of claim 6 wherein R⁸ is -CH₂-, -CF₂-, -CHOH-, -CH(α R¹⁰)-, -CH(ester)-, -CH(alkoxy)- or -CH(halogen)- where the hydroxyl, ester or alkoxy group or the halogen atom is present in the α -configuration and the alkoxy group is

optionally selected from -OCH₃, -OC₂H₅ and -OC₃H₇ and the halogen atom is -F, -Cl, -Br or -I.

[001057] 9. The method of claim 1 wherein the formula 1 compound is an

analog of 16 α -bromo-3 β -hydroxy-5 α -androstane-17-one, 16 α -fluoro-3 β -hydroxy-5 α -

- 5 androstane-17-one, 16 α -chloro-3 β -hydroxy-5 α -androstane-17-one, 16 β -bromo-3 β -hydroxy-5 α -androstane-17-one, 16 β -fluoro-3 β -hydroxy-5 α -androstane-17-one, 16 β -chloro-3 β -hydroxy-5 α -androstane-17-one, 16 α ,3 β -dihydroxy-5 α -androstane-17-one, 16 β ,3 β -dihydroxy-5 α -androstane-17-one, 16 α ,3 α -dihydroxy-5 α -androstane-17-one, 16 β ,3 α -dihydroxy-5 α -androstane-17-one, 16 α -bromo-3 β -hydroxy-5 α -androstane-17-one hemihydrate, 3 α -hydroxy-16 α -fluoroandrostane-17-one, 3 β -hydroxy-16 α -fluoroandrostane-17-one, 17 α -hydroxy-16 α -fluoroandrostane-3-one, 17 β -hydroxy-16 α -fluoroandrostane-3-one, 17 α -hydroxy-16 α -fluoroandrostane-4-one, 17 β -hydroxy-16 α -fluoroandrostane-4-one, 17 α -hydroxy-16 α -fluoroandrostane-6-one, 17 β -hydroxy-16 α -fluoroandrostane-6-one, 17 α -hydroxy-16 α -fluoroandrostane-7-one, 17 β -hydroxy-16 α -fluoroandrostane-7-one, 17 α -hydroxy-16 α -fluoroandrostane-11-one, 17 β -hydroxy-16 α -fluoroandrostane-11-one, 16 α -fluoroandrost-5-ene-17-one, 7 α -hydroxy-16 α -fluoroandrost-5-ene-17-one, 7 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 4 α -hydroxy-16 α -fluoroandrost-5-ene-17-one, 3 α -hydroxy-16 α -fluoroandrost-5-ene-17-one, 3 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 4 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 6 α -hydroxy-16 α -fluoroandrost-5-ene-17-one, 6 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 11 α -hydroxy-16 α -fluoroandrost-5-ene-17-one, 11 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 4 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 4 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 6 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 6 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 11 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 11 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 4 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 4 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 6 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 6 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 11 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 11 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 7 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 7 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 3 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 3 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 3 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 3 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 1 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 1 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 2 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 2 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 12 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene,

12 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 1 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene,
1 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 2 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene,
2 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 12 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene,
12 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 15 α ,17 β -dihydroxy-16 α -fluoroandrost-5-ene,
5 15 β ,17 β -dihydroxy-16 α -fluoroandrost-5-ene, 17 β ,18-dihydroxy-16 α -fluoroandrost-5-ene,
17 β ,19-dihydroxy-16 α -fluoroandrost-5-ene, 15 α ,17 α -dihydroxy-16 α -fluoroandrost-5-ene,
15 β ,17 α -dihydroxy-16 α -fluoroandrost-5-ene, 17 α ,18-dihydroxy-16 α -fluoroandrost-5-ene,
17 α ,19-dihydroxy-16 α -fluoroandrost-5-ene, 16 α -fluoroandrost-4-ene-17-one, 7 α -hydroxy-
16 α -fluoroandrost-4-ene-17-one, 7 β -hydroxy-16 α -fluoroandrost-4-ene-17-one, 3 α -
10 hydroxy-16 α -fluoroandrost-4-ene-17-one, 3 β -hydroxy-16 α -fluoroandrost-4-ene-17-one,
4 α -hydroxy-16 α -fluoroandrost-4-ene-17-one, 4 β -hydroxy-16 α -fluoroandrost-4-ene-17-one,
6 α -hydroxy-16 α -fluoroandrost-4-ene-17-one, 6 β -hydroxy-16 α -fluoroandrost-4-ene-17-one,
11 α -hydroxy-16 α -fluoroandrost-4-ene-17-one, 11 β -hydroxy-16 α -fluoroandrost-4-ene-17-
one, 4 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 4 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
15 ene, 6 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 6 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
ene, 11 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 11 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
ene, 4 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 4 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
ene, 6 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 6 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
ene, 11 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 11 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
20 ene, 7 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 7 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
ene, 3 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 3 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
ene, 3 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 3 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
ene, 1 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 1 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
ene, 2 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 2 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
25 ene, 12 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 12 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
ene, 1 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 1 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
ene, 2 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 2 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
ene, 12 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 12 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
ene, 15 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 15 β ,17 β -dihydroxy-16 α -fluoroandrost-4-
30 ene, 17 β ,18-dihydroxy-16 α -fluoroandrost-4-ene, 17 β ,19-dihydroxy-16 α -fluoroandrost-4-
ene, 15 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 15 β ,17 α -dihydroxy-16 α -fluoroandrost-4-
ene, 17 α ,18-dihydroxy-16 α -fluoroandrost-4-ene, 17 α ,19-dihydroxy-16 α -fluoroandrost-4-

ene, 3 β ,17 β -dihydroxyandrost-5-ene, 3 β -hydroxy-7,17-dioxoandrost-5-ene, 3 α -hydroxy-7,17-dioxoandrost-5-ene, 3,17-dioxoandrost-5-ene, 3,17-dioxoandrost-4-ene, 3,17-dioxoandrost-1,4-diene, 3 β ,7 β ,17 β -trihydroxyandrost-5-ene, 3 β ,7 β ,17 β -trihydroxyandrostane, 3 β ,16 α -dihydroxy-17-oxoandrostane, 3 α ,16 α -dihydroxy-17-oxoandrostane, 3 β ,16 β -dihydroxy-17-oxoandrostane, 3 α ,16 β -dihydroxy-17-oxoandrostane, 3 β ,16 α ,17 β -trihydroxyandrostane, 3 β ,16 β ,17 β -trihydroxyandrostane, 3 β ,16 α ,17 α -trihydroxyandrostane, 3 β ,16 β ,17 α -trihydroxyandrostane, 3 α ,16 α ,17 β -trihydroxyandrostane or 3 α ,16 β ,17 β -trihydroxyandrostane that is within the scope of the claim 1 compounds, optionally wherein -NH₂, a substituted amine, a carbamate or an amide is present at R⁴, or an R¹⁰ is a hydroxyl, thiol, optionally substituted alkyl or a halogen at the 1-, 2-, 4-, 6-, 7-, 9-, 11-, 12-, 14-, 15- or 16-position, wherein the R¹⁰ is present in the α -configuration or the β -configuration.

[001058] 10. The method of claim 1 wherein the subject has, or is subject or susceptible to developing, neutropenia.

[001059] 11. The method of claim 10 wherein the subject is a human or another primate and wherein the neutropenia is postinfectious neutropenia, autoimmune neutropenia, chronic idiopathic neutropenia or a neutropenia resulting from or potentially resulting result from a cancer chemotherapy, chemotherapy for an autoimmune disease, an antiviral therapy, radiation exposure, tissue or solid organ allograft or xenograft rejection or immune suppression therapy in tissue or solid organ transplantation or aging or immunesenescence.

[001060] 12. The method of claim 11 wherein one R⁴ is in the β -configuration or the α -configuration and is -NH₂, a substituted amine, a carbamate having the structure -NH-C(O)-O-optionally substituted alkyl or an amide having the structure -NH-C(O)-optionally substituted alkyl, which is optionally selected from -NH₂, -NHCH₃, -N(CH₃)₂, -NHR^{PR}, -NH-C(O)-H, -NH-C(O)-CH₃, -NH-C(O)-OCH₃, -NH-C(O)-OC₂H₅, -NH-C(O)-OC₃H₇ and -NH-C(O)-optionally substituted alkyl or wherein the formula 1 compound is a compound in groups 1 through 52 or an analog of a compound in groups 1 through 52.

[001061] 13. The method of claim 11 wherein the formula 1 compound is 3 β -hydroxy-17 β -aminoandrost-5-ene, 3 β -hydroxy-16 α -fluoro-17 β -aminoandrost-5-ene, 3 β -hydroxy-16 β -fluoro-17 β -aminoandrost-5-ene, 3 β -hydroxy-16,16-difluoro-17 β -aminoandrost-5-ene, 3 β ,16 α -dihydroxy-17 β -aminoandrost-5-ene, 3 β ,16 β -dihydroxy-17 β -aminoandrost-5-ene, 3 β -hydroxy-16,16-dimethyl-17 β -aminoandrost-5-ene, an ester or

carbonate of any of these compounds or an analog of any of the foregoing compounds where the double bond at the 5-6 position is absent and a hydrogen or other R¹⁰ moiety is present at the 5-position in the α - or β -configuration and/or wherein the hydroxyl group (or ester or carbonate analog) at the 3-position is present in the α -configuration.

5 **[001062]** 14. The method of claim 11 wherein the formula 1 compound is 3 β -hydroxy-17 β -aminoandrost-5-ene.

[001063] 15. The method of claim 1 wherein the subject is a human having cystic fibrosis.

10 **[001064]** 16. The method of claim 15, wherein one or more symptoms or syndromes are ameliorated, or wherein the progression of the disease is reduced.

[001065] 17. The method of claim 16, wherein the one or more symptoms or syndromes are 1, 2, 3 or more of *Staphylococcus* (e.g., *S. aureus*), *Haemophilus influenzae*, *Pseudomonas* or *Burkholderia* respiratory tract or lung infection or propensity to develop a detectable infection or colonization, coughing, wheezing, cyanosis, 15 bronchiolitis, bronchospasm, pneumothorax, hemoptysis, pancreatic exocrine insufficiency, bronchiectatic lung disease, atelectasis-consolidation, pulmonary edema, increased lung vascular hydrostatic pressure, increased lung vascular permeability, sinusitis, respiratory insufficiency, bronchial wall or interlobular septa thickening, reduction of forced expiratory volume in 1 second, dyspnea, impaired male fertility, elevated sweat 20 chloride, mucous plugging, tree-in-bud sign, mosaic perfusion pattern, glucose intolerance or abnormal elevation of one or more of IL-4, IL-8, RANTES, neutrophil elastase, eosinophils, macrophages, neutrophils, eosinophil cationic protein or cysteinyl leukotrienes.

[001066] 18. The method of claim 15 wherein the formula 1 compound is 16 α - 25 bromoepiandrosterone, 16 α -bromoepiandrosterone hemihydrate, 16 α -hydroxyepiandrosterone, 16 β -hydroxyepiandrosterone, 3 α ,17 β -dihydroxyandrostane, 3 β ,17 β -dihydroxyandrostane, 3 α ,16 α ,17 β -trihydroxyandrostane, 3 α ,16 β ,17 β -trihydroxyandrostane, 3 β ,16 α ,17 β -trihydroxyandrostane, 3 β ,16 β ,17 β -trihydroxyandrostane, or an ester, carbonate or other analog of any of these compounds 30 that can convert to the compound by metabolism or hydrolysis.

[001067] 19. A method to treat or to reduce the severity of a chronic allergy or an atopic disease, or one or more symptoms of the chronic allergy or atopic disease in a

subject in need thereof, comprising administering an effective amount of a formula 1 compound of claim 1, wherein

[001068] one R¹ is, or both R¹ together are, -OH, -OR^{PR}, -SR^{PR}, -O-Si-(R¹³)₃, -COOH, -OSO₃H, -OPO₃H, =O, =S, an ester, a thioester, a thionoester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an amide, an amino acid, a peptide, an ether, a thioether, a carbonate or a carbamate, and the other R¹ is independently chosen; and

[001069] one R⁴ is, or both R⁴ together are, -OH, -OR^{PR}, -SR^{PR}, -N(R^{PR})₂, -O-Si-(R¹³)₃, -CHO, -CHS, -CN, -SCN, -NO₂, -NH₂, -COOH, -OSO₃H, -OPO₃H, =O, =S, =N-OH, =N-O-optionally substituted alkyl, an ester, a thioester, a thionoester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an amide, an amino acid, a peptide, an ether, a thioether, an acyl group, a thioacyl group, a carbonate or a carbamate, and the other R⁴ is independently chosen.

[001070] 20. The method of claim 19 wherein the compound is 16 α -

bromoepiandrosterone, 16 α -bromoepiandrosterone hemihydrate, 16 α -iodoepiandrosterone, 16-oxoepiandrosterone, 16-oxoandrosterone, 3 β ,16 α -dihydroxyandrostane-17-one, 3 α ,16 α -dihydroxyandrostane-17-one, 3 β ,16 β -dihydroxyandrostane-17-one, 3 α ,16 β -dihydroxyandrostane-17-one, 3 β ,16 α ,17 β -trihydroxyandrostane, 3 α ,16 α ,17 β -trihydroxyandrostane, 3 β ,16 β ,17 β -

trihydroxyandrostane, 3 α ,16 β ,17 β -trihydroxyandrostane, or an analog of any of these compounds that is (1) 2-oxa or 11-oxa substituted, (2) substituted at the 7-position with an α -halogen, β -halogen, α -hydroxyl, β -hydroxyl or oxo moiety, (3) a D-ring homo analog, (4) a 19-nor analog and/or (5) an analog of any of the foregoing compounds that is substituted with an R¹⁰ substituent disclosed herein, e.g., wherein the R¹⁰ is a hydroxyl, thiol, optionally substituted alkyl or a halogen such as fluorine or bromine at the 1-, 2-, 4-, 6-, 9-, 11-, 12-, 14-, 15- or 16-positions, wherein the R¹⁰, e.g., the hydroxyl, thiol, optionally substituted alkyl or halogen is present in the α -configuration or the β -configuration.

[001071] 21. The method of claim 19 wherein the level or activity of IgE in the subject is at least transiently detectably reduced.

[001072] 22. The method of claim 1 wherein the subject is a human who has a sickle cell disease.

[001073] 23. The method of claim 22 wherein the treatment reduces (1) the severity of pain during vascular or microvascular occlusions, (2) the severity of vascular or microvascular occlusions or (3) the frequency of vascular or microvascular occlusions.

[001074] 24. The method of claim 22 wherein the formula 1 compound is administered by an intermittent administration protocol.

[001075] 25. The method of claim 22 wherein one R¹ is, or both R¹ together are, -H, -OH, -OR^{PR}, -SR^{PR}, -O-Si-(R¹³)₃, -COOH, -OSO₃H, -OPO₃H, =O, =S, an ester, a thioester, a thionoester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an amide, an amino acid, a peptide, an ether, a thioether, a carbonate or a carbamate, and the other R¹ is independently chosen; and

[001076] one R⁴ is, or both R⁴ together are, -OH, -OR^{PR}, -SR^{PR}, -N(R^{PR})₂, -O-Si-(R¹³)₃, -CHO, -CHS, -CN, -SCN, -NO₂, -NH₂, -COOH, -OSO₃H, -OPO₃H, =O, =S, =N-OH, =N-O-optionally substituted alkyl, an ester, a thioester, a thionoester, a phosphoester, a phosphothioester, a phosphonoester, a phosphiniester, a sulfite ester, a sulfate ester, an amide, an amino acid, a peptide, an ether, a thioether, an acyl group, a thioacyl group, a carbonate or a carbamate, and the other R⁴ is independently chosen.

[001077] 26. The method of claim 25 wherein the compound is 3β,17β-dihydroxyandrost-5-ene, 3β,7β,17β-trihydroxyandrost-5-ene, 3β,17β-dihydroxyandrost-1,5-diene, 3β,7β,17β-trihydroxyandrost-1,5-diene, 3β,17β-dihydroxy-16-haloandrost-5-ene, 3β,7β,17β-trihydroxy-16-haloandrost-5-ene, 16α-fluoro-17-oxoandrost-5-ene, 3α-hydroxy-16α-fluoro-17-oxoandrost-5-ene, 3β-hydroxy-16α-fluoro-17-oxoandrost-5-ene, 3β,17β-dihydroxy-16α-fluoroandrost-5-ene, 3α,17β-dihydroxy-16α-fluoroandrost-5-ene, 16α-bromoepiandrosterone, 16α-bromoepiandrosterone hemihydrate, 16α-iodoepiandrosterone, 16-oxoepiandrosterone, 16-oxoandrosterone, 3β,16α-dihydroxyandrostane-17-one, 3α,16α-dihydroxyandrostane-17-one, 3β,16β-dihydroxyandrostane-17-one, 3α,16β-dihydroxyandrostane-17-one, 3β,16α,17β-trihydroxyandrostane, 3α,16α,17β-trihydroxyandrostane, 3β,16β,17β-trihydroxyandrostane, 3α,16β,17β-trihydroxyandrostane, or an analog of any of these compounds that is (1) 11-oxa substituted or 2-oxa substituted if no double bond is present at the 1-2 position, (2) substituted at the 7-position with an α-halogen, β-halogen, α-hydroxyl, β-hydroxyl or oxo moiety, (3) a D-ring homo analog, (4) a 19-nor analog and/or (5) an analog of any of the foregoing compounds that is substituted with an R¹⁰ substituent

disclosed herein, e.g., wherein the R¹⁰ is a hydroxyl, thiol, optionally substituted alkyl or a halogen such as fluorine or bromine at the 1-, 2-, 4-, 6-, 9-, 11-, 12-, 14-, 15- or 16-positions, wherein the R¹⁰, e.g., the hydroxyl, thiol, optionally substituted alkyl or halogen is present in the α -configuration or the β -configuration.

- 5 **[001078]** 27. A method to modulate the expression in a cell of the level of or an activity of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 or more gene products or gene transcripts in the cell, comprising contacting an effective amount of the compound with the cell under suitable conditions and for a sufficient time to detectably modulate the activity or level of the genes, or gene products in the cell, wherein the compound is a compound of any of embodiments
- 10 1-9 and the gene products or gene transcripts are selected from USF1, c-Fos, EGR1, Cul1, RIPK2, I κ B α , I κ B κ b, NF- κ B1 p50, FCAR, c-Fos/ C/EBP β , RANTES, ICAM1, TSG (TNFAIP6), IL-2 receptor α , GRO2, GRO3, HO1, Jun B, c-Fos/JunB complex, JunB/ATF3 complex, c-Jun, c-Fos/c-Jun complex, ATF-3, MMP1, TSG-6 (TNFAIP3), AP-1, EGR1, TGF β , ATF-3/c-Jun complex, c-Fos, MMP3, IL-8, STAT5A, STAT5B, CDKN1A, IFN γ
- 15 receptor 2 (IFN γ R2), T-bet, C reactive protein, immunoglobulin E, an AP-1 family protein, GATA-3, Jak2, Tyk2, stat1, stat3, stat4, stat5, stat6, MIP-1 α , MIP-2, IP-10, MCP-1, TNF- α , TNF- β , LT- β , IFN- α , IFN- β , TGF- β 1, NF- κ B, IL-1 α , IL-1 β , IL-4, IL-6, IL-10, IL-12 receptor β 1, IL-12p35, IL-12p40, IL-23, IL-23 receptor, Nrf2, a Maf protein, a thioredoxin, NQO1, GST, HO 1, SOD2, the catalytic subunit of γ GCS, the regulatory subunit of γ GCS and xCT.
- 20 **[001079]** 28. The method of claim 27 wherein there is a detectable increase in the level of the mRNA, the protein or one or more biological activities associated with the gene product.
- 25 **[001080]** 29. The method of claim 27 wherein the formula 1 compound is 16 α -bromo-3 β -hydroxy-5 α -androstane-17-one, 16 α -bromo-3 β -hydroxy-5 α -androstane-17-one hemihydrate, 16 α -fluoro-3 β -hydroxy-5 α -androstane-17-one, 16 α -chloro-3 β -hydroxy-5 α -androstane-17-one, 16 β -bromo-3 β -hydroxy-5 α -androstane-17-one, 16 β -fluoro-3 β -hydroxy-5 α -androstane-17-one, 16 β -chloro-3 β -hydroxy-5 α -androstane-17-one, 16 α ,3 β -dihydroxy-5 α -androstane-17-one, 16 β ,3 β -dihydroxy-5 α -androstane-17-one, 16 α ,3 α -dihydroxy-5 α -androstane-17-one, 16 β ,3 α -dihydroxy-5 α -androstane-17-one, 16 α -bromo-3 β -hydroxy-5 α -androstane-17-one hemihydrate, 3 α -hydroxy-16 α -fluoroandrostane-17-one, 3 β -hydroxy-16 α -fluoroandrostane-17-one, 17 α -hydroxy-16 α -fluoroandrostane-3-one, 17 β -hydroxy-16 α -fluoroandrostane-3-one, 17 α -hydroxy-16 α -fluoroandrostane-4-one, 17 β -hydroxy-16 α -
- 30

fluoroandrostane-4-one, 17 α -hydroxy-16 α -fluoroandrostane-6-one, 17 β -hydroxy-16 α -
fluoroandrostane-6-one, 17 α -hydroxy-16 α -fluoroandrostane-7-one, 17 β -hydroxy-16 α -
fluoroandrostane-7-one, 17 α -hydroxy-16 α -fluoroandrostane-11-one, 17 β -hydroxy-16 α -
fluoroandrostane-11-one, 16 α -fluoroandrost-5-ene-17-one, 7 α -hydroxy-16 α -fluoroandrost-
5-ene-17-one, 7 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 4 α -hydroxy-16 α -
fluoroandrost-5-ene-17-one, 3 α -hydroxy-16 α -fluoroandrost-5-ene-17-one, 3 β -hydroxy-
16 α -fluoroandrost-5-ene-17-one, 4 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 6 α -hydroxy-
16 α -fluoroandrost-5-ene-17-one, 6 β -hydroxy-16 α -fluoroandrost-5-ene-17-one, 11 α -
hydroxy-16 α -fluoroandrost-5-ene-17-one, 11 β -hydroxy-16 α -fluoroandrost-5-ene-17-one,
4 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 4 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
6 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 6 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
11 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 11 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
4 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 4 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
6 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 6 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
11 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 11 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
7 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 7 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
3 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 3 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
3 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 3 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
1 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 1 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
2 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 2 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
12 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 12 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
1 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 1 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
2 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 2 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
12 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 12 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
15 α , 17 β -dihydroxy-16 α -fluoroandrost-5-ene, 15 β , 17 β -dihydroxy-16 α -fluoroandrost-5-ene,
17 β , 18-dihydroxy-16 α -fluoroandrost-5-ene, 17 β , 19-dihydroxy-16 α -fluoroandrost-5-ene,
15 α , 17 α -dihydroxy-16 α -fluoroandrost-5-ene, 15 β , 17 α -dihydroxy-16 α -fluoroandrost-5-ene,
17 α , 18-dihydroxy-16 α -fluoroandrost-5-ene, 17 α , 19-dihydroxy-16 α -fluoroandrost-5-ene,
16 α -fluoroandrost-4-ene-17-one, 7 α -hydroxy-16 α -fluoroandrost-4-ene-17-one, 7 β -
hydroxy-16 α -fluoroandrost-4-ene-17-one, 3 α -hydroxy-16 α -fluoroandrost-4-ene-17-one,
3 β -hydroxy-16 α -fluoroandrost-4-ene-17-one, 4 α -hydroxy-16 α -fluoroandrost-4-ene-17-one,
4 β -hydroxy-16 α -fluoroandrost-4-ene-17-one, 6 α -hydroxy-16 α -fluoroandrost-4-ene-17-one,

6 β -hydroxy-16 α -fluoroandrost-4-ene-17-one, 11 α -hydroxy-16 α -fluoroandrost-4-ene-17-one, 11 β -hydroxy-16 α -fluoroandrost-4-ene-17-one, 4 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 4 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 6 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 6 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 11 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 11 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 4 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 4 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 6 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 6 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 11 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 11 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 7 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 7 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 3 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 3 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 3 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 3 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 1 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 1 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 2 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 2 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 12 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 12 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 1 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 1 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 2 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 2 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 12 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 12 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 15 α ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 15 β ,17 β -dihydroxy-16 α -fluoroandrost-4-ene, 17 β ,18-dihydroxy-16 α -fluoroandrost-4-ene, 17 β ,19-dihydroxy-16 α -fluoroandrost-4-ene, 15 α ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 15 β ,17 α -dihydroxy-16 α -fluoroandrost-4-ene, 17 α ,18-dihydroxy-16 α -fluoroandrost-4-ene, 17 α ,19-dihydroxy-16 α -fluoroandrost-4-ene, 3 β ,17 β -dihydroxyandrost-5-ene, 3 β -hydroxy-7,17-dioxoandrost-5-ene, 3 α -hydroxy-7,17-dioxoandrost-5-ene, 3,17-dioxoandrost-5-ene, 3,17-dioxoandrost-4-ene, 3,17-dioxoandrost-1,4-diene, 3 β ,7 β ,17 β -trihydroxyandrost-5-ene, 3 β ,7 β ,17 β -trihydroxyandrostane, 3 β ,16 α -dihydroxy-17-oxoandrostane, 3 α ,16 α -dihydroxy-17-oxoandrostane, 3 β ,16 β -dihydroxy-17-oxoandrostane, 3 α ,16 β -dihydroxy-17-oxoandrostane, 3 β ,16 α ,17 β -trihydroxyandrostane, 3 β ,16 β ,17 β -trihydroxyandrostane, 3 β ,16 α ,17 α -trihydroxyandrostane, 3 β ,16 β ,17 α -trihydroxyandrostane, 3 α ,16 α ,17 β -trihydroxyandrostane, 3 α ,16 β ,17 β -trihydroxyandrostane or an analog of any of these compounds that is (1) 11-oxa substituted or 2-oxa substituted if no double bond is present at the 1-2 position, (2) substituted at the 7-position with an α -halogen, β -halogen, α -hydroxyl, β -hydroxyl or oxo moiety, (3) a D-ring homo analog, (4) a 19-nor analog and/or (5) an analog of any of the foregoing compounds that is substituted

with an R¹⁰ substituent disclosed herein, e.g., wherein the R¹⁰ is a hydroxyl, thiol, optionally substituted alkyl or a halogen such as fluorine or bromine at the 1-, 2-, 4-, 6-, 9- 11-, 12-, 14-, 15- or 16-positions, wherein the R¹⁰, e.g., the hydroxyl, thiol, optionally substituted alkyl or halogen is present in the α -configuration or the β -configuration.

5 **[001081]** 30. A method to treat a cardiovascular condition, an autoimmune condition, a trauma, an unwanted inflammation condition or an unwanted immune response to an allograft or rejection of an allogeneic tissue, organ or cell population comprising administering to a subject having or who may be expected to develop the cardiovascular condition, autoimmune condition, unwanted inflammation condition or the
10 unwanted immune response to an allograft or acute or chronic rejection of an allogeneic tissue, organ or cell population an effective amount of a formula 1 compound of claim 1.

[001082] 31. The method of claim 30 wherein the formula 1 compound is a compound in group 1 through group 52 of an analog of any such compound.

[001083] 32. The method of claim 31 wherein the formula 1 compound is a
15 compound in group 1, 2, 3, 14, 17, 26A, 26B, 26C, 26D, 26E, 33A, 33B, 33C, 33D, 33E or 49.

[001084] 33. The method of claim 32 wherein (1) the compound is a compound in groups 1, 2, 3 or 14-3 wherein R¹, R², R³ and R⁴ are optionally in the β,β,α,β , β,β,β,β or the $\alpha,\beta,\alpha,\beta$ configurations respectively or (2) the compound is in group 26A-1, 26A-3, 26A-14-
20 1, 26A-14-2, 26A-14-3, 26A-1, 33A-3, 33A-14-1, 33A-14-2, 33A-14-3, 49-18-14-3, 49-18-14-4 or 49-18-41-6 and wherein R¹, R², R³ and R⁴ are optionally in the β,β,α,β , β,β,β,β or the $\alpha,\beta,\alpha,\beta$ configurations respectively and the second R⁴ moiety is optionally selected from optionally substituted alkyl, optionally substituted alkenyl and optionally substituted alkynyl or (3) the compound is in group 17-14-3, 17-14-4 or 17-14-6 and wherein R¹, R²,
25 R³ and R⁴ are optionally in the β,β,α,β , β,β,β,β or the $\alpha,\beta,\alpha,\beta$ configurations respectively, R⁵ is -CH₃ or -C₂H₅ and R⁶ is -H, -CH₂OH or -CH₃.

[001085] 34. The method of claim 30 wherein the cardiovascular condition is arteriosclerosis, atherosclerosis, hypercholesterolemia, hypertriglyceridemia or a hypertension condition such as pulmonary hypertension.

30 **[001086]** 35. The method of claim 30 wherein the autoimmune condition or unwanted inflammation is a lupus condition such as systemic lupus erythematosus, rheumatoid arthritis, osteoarthritis or Crohn's disease, inflammatory bowel disease, a

scleroderma condition or a vasculitis such as a giant cell arteritis, polyarteritis nodosa or Kawasaki's disease.

[001087] 36. The method of claim 34 wherein the trauma is a bone fracture, a chemical or thermal burn, a hemorrhage or an infarction such as a cerebral infarction.

5 **[001088]** 37. The method of claim 30 wherein the subject is a human or a primate.